

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A computer-implemented method of producing a 3-D image file, the method comprising the steps of:

generating graphics instructions which define image-related characteristics of a first 3-D image frame, wherein a graphics instruction can be used to instruct a display software having a rendering tool to render a characteristic of a 3-D image frame;

generating image commands corresponding to the graphics instructions, the image commands including graphics instruction reference data and graphics instruction argument data; and

transferring the image commands to an output 3-D image file;
rendering a sequence of 3-D image frames with the rendering tool using the instructive information stored in the output 3-D image file and matching up the image commands with corresponding graphics instructions;

wherein the output file includes information to instruct the display software to display the original 3-D image frame so as to be viewable from multiple viewpoints.

2. (Currently Amended) The method of Claim 1, the method further comprising the steps of:

generating image commands corresponding to the graphics instructions which represent a second 3-D image frame; and

transferring the image commands representing the second 3-D image frame to the output 3-D image file;

wherein the output file includes information to instruct the display software to display the first 3-D image frame and the second 3-D image frame into a sequence of 3-D image frames.

3. (Currently Amended) The method Claim 1, further comprising the step of linking a library including a set of procedures containing storage information and rendering information for each of the graphics instructions[;].

4. (Currently Amended) The method of Claim 1, further comprising the step of translating each of the image commands into the graphics instructions concurrently with the storage of the image commands.

Claims 5-7 (Cancelled)

8. (Original) The method of Claim 1, further comprising the step of streaming the output 3-D image file across a network.

9. (Original) The method of Claim 8, wherein the network is the Internet.
10. (Currently Amended) The method of Claim 8, further comprising the step of compressing the output 3-D image file before it is streamed across the network.
11. (Currently Amended) A method of viewing a 3-D imagery, the method comprising:
- (a) reading a movie file command, the movie file command containing graphics instruction reference data and graphics instruction argument data;
 - (b) using the movie file command to reference a corresponding graphics library instruction template;
 - (c) building a graphics instruction by using information contained in a main file header and linking the graphics instruction argument data to the graphics library instruction template; and
 - (d) executing the graphics instruction using a display software; and
 - (e) repeating steps (a) through (d) for a plurality of movie file commands;
- wherein the graphics instruction contains information for rendering a characteristic of a 3-D image so as to be viewable from multiple viewpoints.

12. (Cancelled)

13. (Currently Amended) The method of Claim ~~42~~11, wherein a frame is comprised of the plurality of movie file commands.

14. (Currently Amended) The method of Claim 11, further comprising the steps of reading a the main file header.

15. (Cancelled)

16. (Currently Amended) The method of Claim ~~42~~11, further comprising the step of reading at least one characteristic from a display list, the display list containing at least one characteristic to be rendered in a plurality of image frames.

17. (Currently Amended) A memory for storing data, the data including information for instructing a display software to display a characteristic of a 3-D image so as to be viewable from multiple viewpoints, the memory comprising:

a main header containing information concerning a plurality of 3-D images;

a graphics instruction data field that contains reference information corresponding to a single graphics instruction, the single graphics instruction containing information for instructing the display software to display a characteristic of the 3-D image; and

an argument data field defining at least one argument, the argument data field containing data to be used by the single graphics instruction in generating the 3-D image characteristic.

18. (Currently Amended) The memory of Claim 17, further comprising a command size data field defining a size of a graphics rendering command, ~~the~~ and a 3-D movie command including graphics instruction reference information and graphics instruction data.

19. (Original) The memory of Claim 17, wherein the argument data field comprises an argument size data field defining a size of the argument.

20. (Currently Amended) The memory of Claim 19, wherein the argument size data field includes both data defining the size of the argument and data defining a type of the argument.

21. (Currently Amended) The memory of Claim 19, wherein the argument data field further comprises an argument type data field defining a type of the argument.

22. (Currently Amended) The memory of Claim 18, further comprising:
at least one frame, the frame including at least one set of command size, graphics call, and argument fields; and
a frame header stored in the memory corresponding to ~~each~~ a specific frame, the frame header including general information concerning the specific frame.

23. (Cancelled)

24. (Currently Amended) The memory of Claim 2322, wherein the main header comprises:

an argument type data field stored in the memory defining an argument type; and

an argument size data field stored in the memory defining an argument size.

25. (Original) The memory of Claim 22, further comprising a display list stored in the memory, wherein the display list includes at least one data field containing a characteristic that will be rendered in each of the frames.

26. (Currently Amended) An apparatus producing a 3-D image file, the apparatus comprising:

a translation application for translating a data set into graphics instructions, the data set containing information about the contents of at least one 3-D image, and each graphics instruction containing information for instructing a display software to display a characteristic of a 3-D image;

a graphics converter for converting the graphics instructions into movie file commands, each movie file command including a reference to a corresponding graphics instruction and graphics instruction argument data; and

a movie file recorder for recording a plurality of movie file commands in an output 3-D image file;

a buffer, wherein the movie file commands are first written to the buffer and subsequently transferred from the buffer to the output 3-D image file;

wherein the output 3-D image file ~~contains~~ includes information for instructing a rendering software to render a 3-D imagery, so as to be viewable from multiple viewpoints and further includes image frames, the image frames including a plurality of movie file commands and wherein the movie file commands are written to the buffer until a complete frame is written to the buffer, after which the frame is transferred from the buffer to the output file.

27. (Original) The apparatus of Claim 26, wherein the movie file commands include integer representations of graphics instructions.

28. (Cancelled)

29. (Cancelled)

30. (Currently Amended) The apparatus of Claim 26, further ~~comprised of~~comprising graphics display software to display graphics instructions, wherein the graphics converter passes graphics instructions to the display software simultaneously with passing movie file commands to the movie file recorder.

31. (Original) The apparatus of Claim 30, wherein the graphics converter first converts the graphics instructions into movie file commands, and subsequently converts the movie file commands into the corresponding graphics instructions to be passed to the display software.

32. (Original) The apparatus of Claim 31, wherein the display software includes a graphics rendering tool.

33. (Currently Amended) An apparatus for viewing a 3-D imagery, the apparatus comprising:

a graphics library hash table for referencing a movie file command to a graphics instruction, the movie file command containing a reference to a graphics instruction and argument data for the graphics instruction, ~~and the graphics instruction~~ including information for instructing a display software to display a characteristic of a 3-D image so as to be viewable from multiple viewpoints, and the hash table including references to a plurality of graphics instructions and corresponding movie file commands, and the movie manager translates a plurality of movie file commands into corresponding graphics instructions;

a movie manager connected to the display software for translating a movie file command into a graphics instruction by referencing the corresponding graphics instruction on the graphics library hash table; and

the display software for displaying the graphics instruction.

34. (Cancelled)

35. (Original) The apparatus of Claim 33, wherein the reference to the graphics instruction is an integer, and wherein that integer is referenced in the corresponding movie file command.

36. (Original) The apparatus of Claim 33, wherein the display software includes graphics rendering tool.

37. (Original) The apparatus of Claim 36, wherein the graphics rendering tool renders a plurality of graphics instructions in a sequence.

38. (Original) The apparatus of Claim 33 wherein the graphics instructions are OpenGL instructions.

Claims 39 – 43 (Cancelled)

44. (Currently Amended) A computer data signal for instructing a display software to display a characteristic of a 3-D image so as to be viewable from multiple viewpoints, the signal embodied in a carrier wave, the signal comprising:

a main header containing information concerning a plurality of 3-D images;

a graphics instruction data field that contains reference information corresponding to a single graphics instruction, the single graphics instruction containing information for instructing the display software to display a characteristic of the 3-D image; and

an argument data field defining at least one argument, the argument containing data to be used by the single graphics instruction in generating the 3-D image characteristic.

45. (Currently Amended) The signal of Claim 44, further comprising a command size data field defining a size of a graphics rendering command, ~~the~~ and a 3-D movie command including graphics instruction reference information and graphics instruction data.

46. (Original) The signal of Claim 44, wherein the argument data field comprises an argument size data field defining a size of the argument.

47. (Original) The signal of Claim 46, wherein the argument size field includes both data defining the size of the argument and data defining a type of the argument.

48. (Original) The signal of Claim 46, wherein the argument field further comprises an argument type data field defining a type of the argument.

49. (Currently Amended) The signal of Claim 45, further comprising:
at least one frame, the frame including at least one set of command size,
graphics call, and argument fields; and
a frame header corresponding to ~~each~~ a specific frame, the frame header
including general information concerning the specific frame.

50. (Cancelled)

51. (Original) The signal of Claim 50, wherein the header comprises:
an argument type data defining an argument type; and
an argument size data field defining an argument size.

52. (Currently Amended) The signal of Claim 49, further comprising display
list information, wherein the display list information includes at least one data field
containing a characteristic that will be rendered in each of the frames.